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ABSTRACT

In reevaluating issues involving the effective teaching of reading, this paper considers formal versus informal education, the pace of instruction, the difficulty of reading materials and the criteria that are used to match the text to the student, attention span and its relation to academic achievement, the effectiveness of instructional grouping versus individualization, motivation and management, instructional emphasis, and "academic engaged time" (the amount of time a student is actively involved in formal instruction). After recent research in each of these areas of concern is reviewed, research implications for teacher education (including competency-based teacher education) are considered. (RL)

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THE EFFECTIVE TEACHER OF READING, REVISITED

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At the IRA Convention nine years ago I presented a paper entitled "The Effective Teacher of Reading" (Harris 1969), in which I reviewed research that pointed to the following conclusions:

1. Differences among teachers are far more important than differences among methods and materials in influencing the reading achievement of children. Ratings by supervisors do not agree closely enough with objective measurement to be substituted for measured gains. As Artley (1969) put it, "The teacher is either good or poor in terms of what happens to the child."
2. The relationship between the motivational style of the teacher and pupil learning is not simple. Harsh criticism interferes with learning, but mild criticism does not, and correction of mistakes is necessary. The amount of praise used is related to achievement in some teaching methods but not in others.
3. Research on the cognitive structure of teaching was still struggling with complex problems in classifying and coding teacher and child behavior, and had produced little that was trustworthy.
4. Promising new developments in preservice teacher education were micro-teaching, recording and self-criticism of lessons taught by students, and programmed tutoring.
5. It seemed probable that experienced teachers could be kept interested and even enthusiastic when they would have superior leadership.

The present paper reevaluates these and related issues in the light of recent research. During the 1970's much progress has been made in

analyzing the cognitive aspects of teaching, without neglecting the affective aspects. Excellent analytical reviews of this research have recently been prepared by Rosenshine(1971, 1976, 1977, 1978), by Emans and Fox (1974), and by Medley (1977). The Medley report is the most comprehensive. It was prepared under the auspices of the American Association of Colleges for Teacher Education. Medley's project analyzed 289 research studies which compared teacher behavior with student gains in achievement; what is generally called the study of process-product relationships. Four criteria were established and in order to be selected for detailed analysis a study had to satisfy all four criteria. They were as follows (Medley 1977, p.5):

1. The study had to be designed so that the findings could be generalized to some population of teachers larger than the sample studied.
2. The relationships selected as worthy of note had to be both statistically significant and large enough to be practically important.
3. The product measures had to be based on long-term pupil gains in important areas of school achievement.
4. The process measures had to specify the behaviors shown by teachers in such a way that the procedures could be reproduced as desired.

Out of 289 research studies, Medley found only fourteen that met all four of the criteria set. Two of these dealt with mathematics only, leaving just twelve that bear directly on reading instruction. The majority of them dealt with primary-grade instruction of disadvantaged children. Medley's findings, taken from this small number of rigorously

selected researches, are summarized in 43 tables. These are organized in such a way than one can see whether a trend is consistent across grades, applies only to low-level or high-level skills, or is consistent with both children of low socio-economic status (SES) and middle-class children. Medley's tables deserve to be carefully studied by those who are engaged in the preparation or supervision of teachers, particularly for the primary and middle grades.

The present paper makes use of several researches besides those analyzed by Medley and Rosenshine. Factors which have a significant bearing on reading achievement are considered one at a time, and their interrelations and implications for teacher education are considered afterward.

Formal versus Informal Education

During the past decade a vigorous battle has been waged between the proponents of informal education (sometimes described as open schools or free schools) and those favoring a more formal kind of education, ~~program~~. Informal programs tend to be learner-centered and to stress inquiry and learner choice, with the teacher functioning largely as a helper and resource person. Formal programs are teacher-centered; the teacher plans the instructional sequence and guides it step by step.

Evidence about the quite consistent advantage of formal programs in fostering pupil achievement comes from research in England as well as in the United States. Bennett (1976) chose from nearly all the schools in northwest England those fourth grade classes which were highly formal or highly informal and measured pupil gains in those classes. Significant differences favored the formal classes in reading, English, and mathematics. The formal classrooms had a higher proportion of work-related activity while the informal classrooms had more social interaction.

Bennett's results are consistent with the findings of several research studies in the U.S.A. Stallings and Kaskowitz (1974) studied a large number of first-grade and third-grade classrooms of children from low-income families. The highly structured formal classes almost always ranked high in reading gain while the informal classes almost always ranked low in reading. Solomon and Kendall (1976) studied 50 fourth-grade suburban classrooms. Those in which pupils chose their own activities, were responsible for class planning, and were not dependent on their teachers were also characterized by rowdiness, noise, and disorder. Permissiveness, spontaneity, and lack of control by the teacher were negatively related not only to achievement but also to self-esteem, inquiry, and writing ability. Ward and Barcher (1975) found that formal classrooms had better achievement gain than informal classrooms, and that children with high IQ's showed more creativity in formal classrooms. Wright (1975) found that pupils in informal classrooms were not only lower in reading achievement but also higher in test anxiety.

There seems to be a quite consistent trend favoring the formal over hhe informal pattern, so far as reading is concerned. However, there is much variation from teacher to teacher within each kind of pattern, and therefore it is necessary to look at specifics which may vary widely within each pattern.

Instructional Time

The amount of time spent by the teacher in direct reading instruction has a significant influence on pupil learning, but the relationship is complex. In the CRAFT Project (Harris and Serwer, 1966), four methods of teaching first-grade reading to inner-city disadvantaged black

children were compared. There was a significant positive relationship between time spent in direct reading instruction for all methods combined, which was strongest for the basal reader method. There was a non-significant and slightly negative relationship between reading achievement and time spent in supportive activities such as story-telling, use of audio-visual aids, art correlated with reading, and so forth. In the second grade extension of the project (Harris et al., 1968) instructional time seemed less directly related to reading results. However, in the phonics method there was a correlation of -.66 between time spent on phonics and reading growth, indicating that a heavier than average dose of phonics was detrimental.

Guthrie, Martiza and Seifert (1976) did a major study of the impact of instructional time on reading. They analyzed data from 931 instructional groups in second and sixth grades. They found that for low SES children, classes spending large amounts of time in reading instruction made better gains than classes spending minimum time in reading instruction at both second and sixth grade levels. Increasing amount of time benefited second graders regardless of SES but had an inconsistent effect on middle and high SES children in sixth grade. Instructinnal time was positively related to reading in groups with a low skills emphasis, but less so in groups with a high emphasis on skills. The authoss conjectured that middle and high SES children spend substantial amounts of time reading outside of classroom instruction, while low SES childran are less likely to do so. They concluded that investment of substantial instructional time in reading instruction

is important for low SES sixth graders as well as for primary grade children.

The CRAFT first-grade results were supported by the findings of Cooley and Emrick, who also found that time spent in reading instruction had a significant effect on the reading achievement of first grade children.

The strong evidence that more teacher time spent teaching reading in primary grades produces better reading results, while the picture is much less clear as one goes up the grades, is probably explainable in terms of the increasing importance of seatwork such as silent reading and workbook activities, which are usually not directly supervised by the teacher. Calfee and Hoover (1976) found that time spent with the teacher leading discussion ranged from 9 percent to 14 percent in second-grade and fifth-grade classes, while seatwork occupied 42 percent to 62 percent of the time. When a teacher teaches reading with three or more groups, the time for teacher-led activities has to be shared among the groups.

Pace of Instruction

Closely related to instructional time is the pace or rate of instruction. What are the effects on bright, average, and slow pupils of being taught at a fast or slow pace?

Barr (1973-74) studied the effect of the rate at which new words were introduced in first grade classrooms, in some of which groups proceeded at different rates, while in other classes, all were taught at the same pace. In the uniformly paced classes the pace tended to be slow and the bright children learned fewer words than in the

differentially paced classes. However, in the differentially paced classes the variability as well as the average was higher; the children in the faster-moving groups learned more, but the children in the slow-moving groups did not.

This provides a possible explanation for some of the peculiar results in the Cooperative First-Grade Reading studies of the mid-1960's. For example, Hayes and Wuest (1967) found that first-grade children in Pennsylvania taught by a phonic/linguistic method achieved higher average reading scores than those taught by eclectic basal readers. But they also had a much higher rate of failure: 20 percent failure in the phonic/linguistic classes as compared to six percent in the basal reader classes. It is a reasonable guess that both the higher average and higher percent of failure were due to use of a rather fast pace for all of the pupils.

Adjustment of the pace of skills teaching to the abilities of the learners is another aspect of pace that affects reading results. Tovey (1972) studied the adjustment of phonics teaching to pupil abilities in first grade classes. Only eight percent of the 526 children were receiving phonic instruction that was properly matched to their instructional readiness. Children who were ready for second grade level phonics nearly all received phonic instruction that was too easy for them. Children who were at early first grade level in phonic proficiency nearly all were receiving phonic instruction that was too advanced for them.

Difficulty of Material

For over thirty years, since Betts (1946) advanced the concepts of instructional level and frustration level, we have been advising teachers to fit the book to the child. But there is still some disagreement about the criteria to be used in judging whether or not a particular set of materials is appropriate in difficulty for a given child, and some teachers are much more successful in choosing the right materials than others are.

In a classic study, Cooper (1952) studied the relationship between the difficulty of the basal reader used with a child, as measured by the child's word recognition errors, and gain in reading during the year, in grades two to six. He found that the easier the reader was for the child, the more progress the child made; best gains were made by children who made fewer than three errors per hundred words. Primary children making more than 5 percent errors and intermediate grade children making more than 10 percent of errors made very small gains, so Cooper considered those percents to represent the beginning of the frustration level. Comprehension and presence or absence of qualitative signs of emotional strain were also to be taken into consideration.

My experience has indicated that one of the commonest errors in teaching reading is using materials that are too difficult for the children. ~~Many~~ Some teachers do not seem to hear many of the errors made by children in oral reading and keep the children struggling with material that is frustrating for them.

Attention

We have seen that there is in general a positive relationship between the time spent by teachers in reading instruction, and reading achievement. But pupils do not attend to the teacher, or to an assigned task, all of the time; and differences among children in the consistency with which they attend to the job at hand can be very large.

Measuring attention in the classroom is not easy. Usually a time-sampling procedure is used. An observer with a stopwatch observes one child for a few seconds and records that child's behavior on a coded record sheet, and then does the same for each of the other children. This is repeated many times to provide adequate reliability of measurement.

Bloom (1976) found fifteen studies in which student attention was correlated with academic gain. In all but one of these studies there was a substantial positive relationship between the proportion of time spent attending to tasks and student gains. In Medley's tables the following behaviors were positively related to achievement for both low SES and high SES children: pupils on task, involved; absence of withdrawn behavior; and pupil attention to subject of lesson.

The fact that pupils learn when they attend and don't learn when they don't attend does not tell us how to get them to attend. Attention tends to be good when teaching is otherwise effective; it does not seem feasible to work on attention as a thing in itself.

Grouping and Individualization

Considering how much controversy there has been about ways of organizing classes for reading instruction, the research evidence relating various grouping and individualizing procedures to reading achievement is quite limited. Medley's tables indicate that for low SES pupils in primary grades, effective teachers tend to spend more time working with the whole class or large groups, and allot less time to small groups working independently or to unsupervised independent work, than ineffective teachers. According to one study (McDonald and Elias, 1976), grouping by reading level produces better reading gains in both low and high SES second grades than using a variety of groupings in a class. Much more evidence is needed on this important set of issues before firm conclusions can be drawn.

Motivation and Management

Several studies provide consistent evidence that effective teachers tend to use praise and encouragement more than ineffective teachers, and avoid harsh criticism, scolding, sarcasm, or other expressions of strong disapproval. Orderly, teacher-directed formal classrooms in which the teacher shows a good deal of warmth and utilizes positive reinforcement tend to do better than orderly, teacher-directed classrooms that are emotionally cold (Solomon and Kendall 1976). Permissive teachers tend in general to be ineffective. And pupil attitudes toward school tend to be more favorable toward school in the orderly environment maintained by effective teachers.

"When the effective teacher's pupils work independently, the teacher actively supervises them, giving careful attention to those individual children who, in the teacher's opinion, need it. The ineffective teacher who assigns pupils to seatwork leaves them pretty much to themselves; anyone who needs help must seek it." (Medley 1977, p. 18)

The effective teacher seems to maintain an orderly environment with little apparent effort. This orderliness is probably a by-product of several other characteristics: emphasis on academic learning, clear specification of jobs to be done, selection of appropriate materials, selection of skills based on a clear understanding of pupil needs, moving at a pace neither too fast nor too slow, checking work done independently as well as in groups, generous praise for success, and provision of help when needed. When these conditions hold, children find that they can and do learn and they achieve satisfaction from learning.

On the other hand, in classes in which children are repeatedly frustrated by being given tasks that are beyond them, are bored by a lack of sufficient challenge, or are allowed to drift without enough teacher guidance, disorder is a natural and almost inevitable outcome. Faced with disorder, the teacher becomes frustrated and may respond with hostility. A teacher's use of negative forms of motivation can be the result of poor curricular planning rather than an inevitable consequence of the teacher's personality.

It is also probable that some teachers are prevented from being effective by having some pupils whose behavior is so disruptive as to make it virtually impossible to maintain an orderly, learning-centered environment. A teacher with several severe behavior problems in one class can do little teaching, and the class can do little learning.

The currently fashionable notion of mainstreaming the exceptional child, which means keeping him or her with normal classmates much of the time, indicates that behaviorally disturbed children will continue to disrupt classrooms. Special classes and even special schools are required for the severely disruptive child. When a child's behavior makes it impossible to maintain an orderly classroom, administrative action is necessary to remove that child from that class, temporarily or permanently.

Instructional Emphasis

The kinds of questions that teachers ask, and the way they respond to pupil answers, have been investigated in several recent studies.

Medley found only one study that compared teacher questioning procedures in classes with high SES or low SES children. The results of that study (Brophy and Evertson, 1974) suggest that in some respects what works well with low SES children may work poorly with high SES children, and vice versa. Medley describes two kinds of discussion strategies. In Strategy I the questions tend to be difficult and thought-provoking, and the teacher tends to call on a child before asking the question, or to call on a volunteer. If the answer is wrong the teacher often calls on another child, or gives the answer. These teachers seem to be challenging the pupils to respond near their maximum capability. This strategy is used by effective teachers of high SES children and by ineffective teachers of low SES children.

In Strategy II, most questions are simple, elicit answers that

are usually correct, and rarely merit further discussion. The teacher is apt to ask a question first and then choose a child to answer it. Wrong answers are infrequent, and if a pupil doesn't know the answer, the teacher is likely to provide a cue or rephrase the question to make it easier. Strategy II emphasizes giving pupils ample experience of success. It is used by effective teachers of low SES children and by ineffective teachers of high SES children.

Many reading specialists have in recent years been chiding teachers for asking too many factual questions and not enough questions requiring some thinking. The research just cited suggests that we may have been right for some classrooms and wrong for others, or right for some groups and wrong for other groups, within the classroom. Obviously we urgently need additional good research studies to explore further the question whether or not different teaching styles are effective with low SES children as compared with other children. It would be rash at this point to make important changes in teaching strategies on the basis of the present limited evidence.

Academic Engaged Time

Rosenshine and Berliner (1977) have recently tried to integrate much of the information that I have already summarized into a new concept which they call "academic engaged time." This concept is a combination of two student variables: content covered, and student attention or engagement.

By content covered, Rosenshine and Berliner mean the opportunity pupils have to learn. What is not taught is not learned. They cite evidence from several studies that there is a positive relationship between the specific material taught and what students learn. In regard to reading, they refer to the studies previously mentioned in this paper to the effect that the direct teaching of reading pays off, while indirect supportive activities such as art related to reading show zero to minus correlations with reading gains.

In regard to engagement, they refer to Bloom's analysis of the relation between attention and achievement. This indicates that there is a significant relationship between the percent of time that children spend actively involved in a task and the amount learned.

They combine these two ideas, content covered and student engagement, into the concept of academic engaged time. By this they mean the time that a student spends in academically relevant activity at an appropriate, moderate level of difficulty. They point out that teacher allocated time is not the same as student engaged time. In one class the students may be academically engaged 80 percent of the time, while in another class the percent of engagement may be only 50 percent. But if the 80 percent class is given 30 minutes and works 24 minutes, and the 50 percent class is given 60 minutes and works 30 minutes, the latter class should learn more.

According to Rosenshine and Berliner's analysis, direct teacher-centered instruction is more efficient than student-centered instruction because there is more academic engaged time per hour of instruction.

This is why formal classrooms tend to have higher achievement than informal classrooms. They believe that the concept of academic engaged time accounts for most of what has been discussed above under the headings of formal versus informal education, instructional time, pace of instruction, difficulty of material, attention, and class organization. This concept of academic engaged time is only a year or so old. It seems to have considerable merit.

Rosenshine and Berliner are careful to point out that while informal classrooms generally have a lower percent of academic engagement, this can be made up by allocating more instructional time. With middle-class children, learning and reading outside of school probably add significantly to academically engaged time, while low SES children are less likely to benefit in this way.

Some Implications for Teacher Education

For generations we have been training teachers as though we really knew what teachers ought to do. Each professor had his or her own concept of an ideal teacher, and tried to help students to approximate that vision. Within the same department, the professors often have had different visions of the ideal teacher, and emphasized different objectives and goals. In the absence of definitive research that could ~~define and~~ describe really effective teachers, this was a necessary state of affairs.

We now have the beginnings of a research base for teacher education. On a few issues we have fairly firm knowledge; on most issues there

are just a handful of satisfactory studies, and these are often restricted in the degree to which they can be generalized to other groups of students or to other grades. But if we continue to advocate practices which research suggests to be ineffective, it should be with full knowledge of the research available and with good reasons for waiting until the research picture is more complete and definitive.

Competency-based teacher education programs have been increasing rapidly in number, in some states with strong pressure from the state education department. Competency-based courses generally provide the student with a list of the objectives and competencies he or she is expected to master, provide practice in application as well as a knowledge base, and evaluate students on what they can do as well as what they know.

Competency-based education for the teaching of reading assumes that we can validly distinguish the competent from the less competent teacher, and can set models for students that will assist them to become competent teachers. Research suggests that not all such models are valid, and that no one model is effective with all kinds of children and at all ages. On many issues that affect teacher competence, such as proper sequencing of skills, selection of materials, setting the pace for the learner, and choosing a questioning strategy, we need much more information than we have. But the progress in the past few years has been tremendous, and we are justified in hoping that in another few years we will be much better equipped to prepare effective teachers on reading.

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